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KIEV CONFERENCE ON TELEVISION PROBLEMS

A scientific and technical conference on television problems was held in Kiev recently by the Ukrainian, Leningrad, and Khar'kov branches of the VNORIE (All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov). Reports were read on three subjects: (1) the present status and new accomplishments of engineering in the television field, (2) the problem of increasing the range of television transmissions, and (3) the operation of television centers. The conference was opened by D. D. Aksekov's report "The Status of Television Engineering."

In a report read on the same day, "Methods and Equipment for Reducing Radio Interference With Television," I. F. Nikolayevskiy generalized the results of considerable research on the study of interference with television reception. Nikolayevskiy stressed in particular the interference caused by harmonics of broadcast stations, medical equipment, electric motors, electric welding equipment, aircraft engines, electric and automobile transportation, and repeated reflections of television signals from buildings. Most of this interference can be eliminated by high- and low-frequency filters, voltage dividers connected at the television receiver input, and filters in the supply circuit.

Rapid production of interference-suppressing equipment already developed was recommended by the conference. In addition, it was recommended that circuits for interference suppression be incorporated into newly developed television receivers.

From V. S. Polonnik's report, the conference learned of a new television relay station for transmissions from parks, theaters, and stadiums. This station has a number of advantages over the stations used at present. The conference noted the real need for developing mobile television stations and recommended that work on their improvement and reduction in size be continued. Adaptation of these stations so that they can be supplied from low-power mobile autonomous electric power stations was also recommended.

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V. I. Sardyko reported on the accomplishments of Soviet scientists and engineers in the development of large-screen projection television equipment. G. B. Davydov told of work on coaxial-cable television transmission and of the prospective development of this type of transmission. The conference noted the importance of the developments discussed in the reports by Davydov and Sardyko.

The participants of the conference were extremely interested in work on the reception of television transmission far beyond line-of-sight limits, in particular, information submitted by I. S. Turgenev on the propagation of ultrashort waves from Kiev to Khar'kov. The regular observations made in Khar'kov on the reception of the sound accompaniment of the Kiev Television Center transmissions showed that such reception is quite possible in most cases, and even at distances greater than 400 km. The observations established that propagation conditions are much better in summer than in winter; a dependency of signal strength on meteorological conditions along the propagation path was also observed. Measurements of the field intensity of the Kiev aural transmitter at Khar'kov showed that this intensity was many thousands of times greater than that calculated from diffraction formulas. All this information indicates the need for a thorough study of the propagation of ultrashort waves over great distances and suggests that existing formulas need considerable revision. The conference resolved that such observations should be continued and systematized and that special instruments should be developed to evaluate the observations objectively.

Radio amateurs from Zhitomir (130 km from Kiev), Rovno (300 km), Gomel' (225 km), Semenovka, and many other places discussed reception from the Kiev Television Center at these points. These discussions demonstrated the feasibility of fairly frequent reception of television programs at distances considerably greater than the calculated effective radius of the television center. Naturally, such reception entails the use of special antennas and additional rf amplifiers. Some of the radio amateurs gave details on the reception of foreign television centers. Such cases are apparently connected with the reception of a space wave reflected from the ionosphere.

The conference adopted a resolution calling for continued research on ultrashort-wave propagation and assigning the Kiev Television Center primary responsibility for this work. The center is to be assisted by institutes of the Academy of Sciences Ukrainian SSR. The conference adopted a resolution requesting MESEP (the Ministry of Electric Power Stations and the Electrical Industry) to set up production of standard amplifier adapters to increase the sensitivity of television receivers so that more people can receive television centers at great distances.

A. Yu. Raizanskiy's report "Systems for Long-Distance Television Reception" dealt with a relay installation and a collective antenna which made reception of the Moscow Television Center possible in Aleksandrov, Vladimir Oblast.

The following reports were also submitted at the conference: D. D. Aksenov's "The Line Sensitivity of the Iconoscope," A. M. Zayezdnyy's "Analytical Calculation of the Transient Characteristics of Television Receivers With a Corrected Response," A. K. Stolyarov's "A Synch Generator for a Small Television Center," and A. I. Khachaturov's "Problems of Increasing the Range of Television Broadcasting."

In conclusion, conference participants heard reports on the operation of television centers by V. G. Kozinskiy and A. I. Shchipkov, chief engineers of the Kiev and Leningrad Television Centers, respectively.

For some incomprehensible reason, the Moscow Television Center, the oldest in the country, was not represented at the conference.

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The conference noted the inadequate liaison between scientific research institutes and operational workers. Because of this, defects which have been revealed in operational practice are frequently repeated in newly developed equipment. The conference recommended that joint meetings between representatives of industry and workers of television centers be held.

The conference also requested that MESEF, the Ministry of Communications, and the administrative board of VNCHIE call an all-union conference of scientists and radio amateurs interested in the long-distance television reception to pool the results of theoretical research and practical observations in the propagation of ultrashort waves.

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